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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Stub-Winged Helicopter

See Page 35

A SCIENCE SERVICE PUBLICATION

PUBLIC HEALTH

Radio Report on Health

► THE WORLD'S most extensive and intensive research upon disease, conducted by the Government's National Institutes of Health, Bethesda, Md., a Washington suburb, will be reported in a series of ten weekly radio interviews conducted by Watson Davis, director of Science Service and editor of the *SCIENCE NEWS LETTER*.

Beginning on Saturday, July 20, over the Columbia Broadcasting System's nationwide radio network, Dr. James A. Shannon, who directs the gigantic group of laboratories covering all health phases, tells the objectives, accomplishments and hopes of the thousands of projects conducted by thousands of specialists.

On successive weeks, the directors of the seven institutes, the clinical center and the division of biologics standards will discuss with Mr. Davis their plans and research results. The National Institutes of Health are the research facilities of the U. S. Public Health Service, part of the Federal Department of Health, Education and Welfare.

Part of the *Adventures in Science* series which Mr. Davis has conducted over the Columbia Broadcasting System beginning in 1930, these interviews will be heard in all parts of the nation.

Originating from Washington, the quarter-hour program is on the network Saturday afternoons at 1:45 p.m. EDT, with some stations recording it and presenting it later. Local CBS programs should be consulted.

The schedule for the complete series covering the Government's major medical research effort, on which more than \$240-

000,000 of Federal funds are being spent, is as follows:

July 20—Dr. James A. Shannon, director, National Institutes of Health, will discuss "Our Research for Health."

July 27—Dr. John R. Heller, director, National Cancer Institute, will discuss "The Problem of Cancer."

Aug. 3—Dr. James Watt, director, National Heart Institute, will discuss "America's Greatest Killer."

Aug. 19—Dr. Robert H. Felix, director, National Institute of Mental Health will discuss "Mental Health."

Aug. 17—Dr. Justin M. Andrews, director, National Institute of Allergy and Infectious Diseases, will discuss "Research on Allergies."

Aug. 24—Dr. Roderick Murray, director, Division Biologics Standards, will discuss "The Present and Future of Vaccines."

Aug. 31—Dr. Jack Masur, director, Clinical Center, will discuss "How Patients Help Medical Research."

Sept. 7—Dr. F. A. Arnold, Jr., director, National Institute of Dental Research, will discuss "Research for Better Teeth."

Sept. 14—Dr. Floyd S. Daft, director, National Institute of Arthritis and Metabolic Diseases, will discuss "Arthritis and Metabolic Diseases."

Sept. 21—Dr. Henry A. Imus, assistant to the director, National Institute of Neurological Diseases and Blindness, will discuss "Neurological Diseases and Blindness."

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MANPOWER

Hungarian Scientists in U.S.

► COMMUNISM'S BRUTALLY enforced loss of Hungarians who fled their homeland during the October Revolution, in 1956, is our gain, a forthcoming report by the National Academy of Sciences and the National Research Council shows.

More than 1,000 of the refugees were young scientists, engineers and technicians—a substantial scoop of cream off the Hungarian crop. All will have been placed in jobs of their profession in the United States.

The report, written by Drs. Wallace W. Atwood Jr., director of the Academy's office of international relations, and M. H. Trytten, director of the Academy's office of scientific personnel, treats fully the role the Academy played both here and in Vienna in interviewing, screening, helping and placing the scientists in their respective fields.

The report states that "the arrival of young and well-trained Hungarian scientists is a valuable contribution both to the academic community and to the national economy. In money terms alone the training of these well advanced young scientists and engineers behind the Iron Curtain represents an investment of many millions of dollars.

"The true value of the Hungarian migration to the countries of the free world can perhaps never be measured adequately. The group as a whole is a young group compared to other migrations. Most of the professional people are between 25 and 35 years of age. Their contribution to the working population is significant since in our population this age group shows a proportionate deficiency in number . . ."

The report stresses the fact that "in almost all instances" the Hungarian scientists and engineers filled positions for which there were no American scientists or engineers available.

Jobs were found in the salary bracket from \$4,000 to \$15,000 for the refugee scientists. They went to work for industries, universities, research institutions, hospitals, libraries, agricultural experiment stations and Government research laboratories. Some received pre- or post-doctoral fellowships in their scientific field.

Of the 700 scientists and engineers placed through the Academy's Camp Kilmer office, 30% were engineers; 16% medical personnel; 10% chemists; 3% mathematicians or physicists; 6% in other natural sciences;

11% technicians and the remaining 24% in other non-scientific professions.

The Academy's mission to Austria, headquartered in Vienna, placed 300 scientists and engineers who will come to this country and helped 75 go to free world nations.

In describing the operation at Camp Kilmer, Drs. Atwood and Trytten wrote that "a real transformation occurred when the breadwinner of the family learned that he had a position and would shortly leave camp to commence a life of freedom in the United States. With hopes fulfilled, family smiles came easily and just as easily came tears, the universal expression of mixed emotions."

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MEDICINE

FTC Cracks Down on Herb Medicines

► TWO HERB medicines, advertised as a cure for arthritis and rheumatism, as well as an aid for such troubles as poor digestion and poisoned blood, have come under attack by the Federal Trade Commission (FTC).

The similar, if not identical, drug preparations "O-Jib-Wa Bitters" and "Oscoda Bitters" are produced in Michigan and one of them, O-Jib-Wa Bitters, is sold only in that state, most sales being made through drug stores.

It has been extensively advertised in Michigan newspapers and, because of this, the FTC has claimed legal power in the case. The commission has ordered the producers of the herb medicines to stop misrepresenting their products in interstate commerce.

The case against the herb medicines has been before the commission for some months. An initial decision against O-Jib-Wa Bitters was contested on the grounds that the FTC had no jurisdiction over a product sold exclusively within the borders of a state.

The FTC ruled, however, that the advertising was in newspapers that were delivered outside the state of Michigan and, therefore, was likely to induce sales of the drug product.

The commission's report stated that the medicines were a "10% glycerine and water decoction," made with equal parts of 11 powdered herbs plus a liquid extract of the herb mandrake, and a preservative.

O-Jib-Wa Bitters are made by a small company employing six persons and in 1954-55 grossed approximately \$180,000 annually, the FTC reported.

The other medicine, Oscoda Bitters, is produced to handle all out-of-state customers. When requests come in from other states for O-Jib-Wa Bitters, they are sent back with an order blank for Oscoda Bitters and a letter stating that the two products are almost identical.

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Pumping natural gas into an underground petroleum reservoir to force oil toward producing wells halted a steady drop in output at California's largest oil field.

PHYSICAL CHEMISTRY

Make New Element 102

Curium, bombarded with accelerated carbon ions, has yielded scientists their newest man-made element, number 102, tentatively named nobelium.

► THE LATEST man-made element, number 102, has been created by an international team of scientists from Argonne National Laboratory, Lemont, Ill., the British Atomic Energy Research Establishment at Harwell and the Nobel Institute for Physics, Stockholm.

Only about 50 atoms, a completely unweighable amount, have been made.

The new element was found by bombarding curium, which is also a synthetic element, with carbon ions accelerated to great speeds in the Nobel Institute's cyclotron.

The U. S. and British scientists suggest the name, nobelium, for the heaviest element. The Institute where the work was performed is named in honor of the Swedish chemist, the late Alfred Nobel, who established the Nobel Prizes awarded annually for outstanding contributions in the arts and sciences.

The form of nobelium made by the international team is reported to have an atomic mass number of 253. It is very unstable, having a half life of about ten minutes. When the nobelium decays, one way by which it was identified, it emits alpha particles, which are the nuclei of helium atoms.

It was also identified by its chemical behavior in a "standardized zeo-carb resin column."

Nobelium is the fourth element scientists have reported finding in the past three years. Elements 99 and 100, einsteinium and fermium, were found jointly by groups at Argonne and at the University of California Radiation Laboratory when they examined the nuclear debris from the first hydrogen bomb explosion in November, 1952. First reports of the discoveries appeared in 1954. (See SNL, Feb. 13, p. 103, and March 6, p. 147, 1954.)

Element 101, mendelevium, was first

made in 1955, by Dr. Glenn Seaborg and his associates at the California Laboratory. Only 17 atoms, an almost unimaginably small amount, were synthesized. (See SNL, May 14, 1955, p. 307.)

The scientists cooperating in discovery of element 102 were Paul R. Fields and Arnold M. Friedman of Argonne National Laboratory, John Milsted and Alan Beadle of Harwell, and Hugo Atterling, Wilhelm Forsling, Lennart Holm and Bjorn Astrom of the Nobel Institute for Physics.

The United States, through the Argonne National Laboratory, provided the very rare isotope curium 244, used in the experiments. The curium was shipped to Harwell, where it was prepared for the cyclotron bombardment. Harwell also provided the rare isotope carbon 13 that was used as the bombarding particle. The Nobel Institute provided the cyclotron, selected because it could furnish the intense speed for high-energy carbon 13 ions necessary for the experiments.

Prior to making element 102, Mr. Fields and his associates had theorized that the best chance for building it would come from bombarding the heaviest element with the lightest possible particle. Curium is the heaviest element available in sufficient quantities for testing purposes and carbon ions are the lightest particles that would create element 102.

The classification system for elements, called the periodic table, was established in 1869 by the Russian chemist, D. Mendeleev. It lists the elements in order of increasing atomic numbers. Elements heavier than uranium, number 92, are all synthetic. Curium is man-made element number 96.

Scientific details of the discovery of nobelium will be reported in a forthcoming issue of the *Physical Review*.

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next 1,400 miles deeper into the interior is the outer core. Completing the 4,000 miles to the center is the inner core, some 800 miles thick.

The inner core is thought to consist of a more solid substance than the outer core, which is believed to be composed of a relatively plastic material such as molten metal.

Since no one has seen more than a thin layer of the earth's crust, scientists have to use the information they can glean from seismograph readings to learn about the earth's interior. Large earthquakes release considerably more energy than a hydrogen bomb explosion, but both have now been shown to be useful research tools.

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AERONAUTICS

Passenger Helicopter Has Turbo-Prop Engines

See Front Cover

► DESIGNED WITH turbo-prop engines on its stub wings providing forward propulsion and with pressure jets at the tips of the rotor blades providing forward lift, a helicopter is being built in Britain for flight this summer.

Named the Fairey Rotodyne, it is said to be capable of carrying 48 passengers at a maximum speed of 170 miles per hour over stages of 400 miles.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows the Rotodyne's starboard engine and two rotor blades being tested on a special spinning rig at the British Ministry of Supply's experimental establishment in Wiltshire, England.

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WEATHER EYE—Two of these devices, developed by the Perkin-Elmer Corporation, Norwalk, Conn., will be mounted in one of the earth satellites that will circle the earth during the International Geophysical Year. They will measure radiation reflected from the earth's cloud layer to help meteorologists gather information for study and long-range forecasting.

SEISMOLOGY

Study Earth's Inner Core

► EARTHQUAKE waves caused by H-bomb explosions, recorded at stations halfway round the world from the Pacific, pass through the earth's inner core, two Australian scientists report.

They analyzed earthquake readings taken by sensitive seismographs during 1954 and discovered a certain pattern for four thermonuclear detonations. From this information they could reconstruct the exact time the fireballs were formed.

United States scientists, under security restrictions, have announced that seismographs can detect both atomic and hydrogen bomb explosions, but have not revealed further information. The hydrogen ex-

plosions could be of value in learning about the earth's structure, the Australian scientists point out in *Nature* (July 6).

Drs. K. E. Bullen of the University of Sydney and T. N. Burke-Gaffney of River-view College Observatory, New South Wales, say detection of these earthquake waves from H-bombs helps to prove the earth possesses an inner core.

The currently accepted picture of the earth's structure is that it consists of four parts.

The topmost layer, with which every one is familiar, is called the crust and is 25 miles thick. Below the crust is the mantle, which is about 1,800 miles in depth. The

PUBLIC HEALTH

Addicts Recall First Drink

► HOW WELL you remember your first drink may help indicate your chances of becoming an alcoholic, Dr. Albert D. Ullman of Tufts University, Medford, Mass., has found.

It is certainly not a one-item "test" of proneness, but studies of alcohol addicts show that their first drink was more emotionally arousing and thus easier to remember than the first drink was for normal drinkers, Dr. Ullman reports.

An earlier test compared college students with a group of alcoholics in their memories of the first drinking experience. Although a majority of the students remembered the first drink, a significantly greater number of alcoholics remembered theirs, and in more detail. It was a more anxiety-loaded experience for the alcoholics and more were intoxicated from their first experience.

In all, there were six characteristics of the first drinking experience of the alcoholics and of the college students that were significantly different.

These included their memory of the first drink and age at the time, whether or not they became intoxicated, where they had their first drink, who was present, and how soon after did they have the second drink.

Since there are 11 male alcoholics for

every two female ones, Dr. Ullman theorized that more men would show the characteristics associated with alcoholism than would women. To test this, he assembled another group of both male and female college students and gave them a questionnaire about their first drink.

Contrary to his expectations, more women than men remembered their first drink, although three-fourths of all the students reported they remembered it.

If recalling the first drink is taken as the index of emotional arousal associated with drinking, then the women would appear to be more "aroused" than the men, Dr. Ullman reports. But there is a higher degree of protection and restraint imposed on the women that has to be considered, he adds.

Girls tended to have their first drink at home with their parents who wanted to teach them what drinking was like and how to handle it. Boys, on the other hand, more often had their first drink outside the home together with their contemporaries or older persons.

Dr. Ullman reports his findings in the *Quarterly Journal of Studies on Alcohol* (June).

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ENGINEERING

Missile Failures Important

► MISFIRES and other unsuccessful launchings of rockets and guided missiles are often more important to the U. S. defense effort than are successful firings.

This is the opinion of Robert Greene, the rocket engineer who developed a motor for the Air Force rocket test sleds and who is now pioneering commercial and peacetime uses for rocketry. Mr. Greene, project engineer of the Grand Central Rocket Company, Redlands, Calif., told SCIENCE SERVICE that all rocket projects encounter failures and misfires.

"They are frequent, and they are normal in the course of developing a rocket or missile. In nearly every case valuable information is gained, often even when the projectile fires but crashes."

Mr. Greene pointed out that development of the test sled rocket motor, now considered one of the most efficient solid propellant rockets produced, involved ten consecutive unsuccessful firings before his team was able to achieve a successful run of the motor. In each case needed information was gained.

A careful study of the failures paid off, he said, and the sled's "rocket motor now has an extremely high efficiency, approaching that of the Project Vanguard third stage motor, which is considered the ultimate in solid propellant rockets."

Referring to some public criticism of misfires and failures in the nation's rocket and

missile program, Mr. Greene cautioned that the criticisms do not help the program.

"We must expect, in fact we need," he explained, "a certain amount of failures. Each firing that the public might call a 'failure' actually represents time, money and effort well spent."

Asked about the failure of the first liquid powered motor delivered for stage one of the artificial satellite missile, Mr. Greene said he was sure valuable information was obtained, and that both it and the failure of the first Atlas intercontinental ballistic missile were necessary steps toward success.

Two rockets developed by Grand Central for fighting forest fires have already been successfully used, and Mr. Greene, together with another engineer, has been assigned the task of investigating how to make rocketry less dependent on war.

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TECHNOLOGY

Robot "Brains" Figure Electric Power Schedules

► ANALOG COMPUTERS are now being used to see that electric power is dispatched to users such as factories or local power companies on the most economical schedules possible, reported R. B. Shipley, consulting electrical engineer, to the American Institute of Electrical Engineers meeting in Montreal, Canada.

More of the computers are taking over as automatic "watchmen" of today's vast electrical generation-transmission networks, and are being put to work to figure the best and most economic routes for the electric power sent out to consumers. The electronic "brains" do this by setting up internal electrical-mathematical "models" of the power system, and rapidly solving problems fed into them by referring to these models.

Electrical analog circuits "are the first to solve this economic dispatch problem exactly and directly," Mr. Shipley said, since the computers make possible changes in routing the electricity at minimum expense, and provide a great deal of additional information about the vital workings of the power network.

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METEOROLOGY

Improved Storm Forecasts

The nation's weather experts predict that current meteorological research may result in better forecasting of impending storms and greater savings in life and property.

► IMPROVED FORECASTS of tornadoes and destructive windstorms, with a consequent "further saving of lives and property," is expected by the nation's top group of weathermen.

The American Meteorological Society's governing council so concluded in an official statement on the "detection, tracking and warning of tornadoes." The council foresees that research now underway will result in more accurate pinpointing of where severe local storms will occur than is possible at present. Today's tornado forecasts, the statement noted, prove correct about 50% of the time for six to 12 hours in advance. The region covered by such predictions, however, usually has an area of 30,000 square miles or more, while the area of destruction from a single tornado rarely exceeds ten square miles.

The council said the main problem, once the severe local storm prediction has been issued, is to determine "which particular thunderstorm cell within a given area will be the one that produces a tornado or a destructive windstorm."

Three main tools are now available to the tornado forecaster:

1. The report of an actual sighting of the tornado or other severe weather conditions. From such reports, the storm's future path can be predicted and communities alerted.

2. The use of weather radar. Under some conditions, tornadoes can be tracked by radar, with consequent improved predictions of their expected paths.

3. The detection of the electrical discharge accompanying each thunderstorm, a method known as "sferics." The approximate location of the storm can be found by sferics readings taken at three or more stations.

"The results of current research with electronic equipment hold considerable promise of potential improvements in facilities for alerting the public to the probability of impending storms and a further saving of lives and property is to be expected," the Society's council concluded.

Long Forecasts Mislead

► YEAR-LONG weather forecasts, unless they are described clearly as experimental and of unproved value, mislead the public, the nation's top group of meteorologists has charged.

In an official statement, the American Meteorological Society's governing council presented its views on the reliability of weather forecasts. The Society, composed of nearly 6,500 meteorologists from private industry, universities and the Government, is the professional scientific organization representing weathermen in the Americas.

The present state of weather prediction, the Society's council concluded, "does not permit a forecaster to specify day-by-day variations in the weather any more than one week in advance." Forecasts for periods more than a month in advance, even though phrased in such general terms as "the next season will have abnormally high temperature or precipitation," are experimental and their success has not yet been demonstrated.

The statement was issued because of the "potential value of weather forecasts to the economy of the nation."

Detailed weather predictions are possible for two or three days in advance, it says, but their reliability falls off progressively after the first 24 hours.

Forecasts of expected weather three to seven days in the future must be issued in less specific terms than short-range predictions, and are ordinarily restricted to a statement that the temperature will be higher or lower than normal for that time of year and that predominantly dry or wet weather will prevail.

For periods of one week to one month in advance, the average temperature and total precipitation expected for the period can be compared with the normal temperature and precipitation for that same period with some skill.

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PHYSIOLOGY

Chickens Are Having Heart Beats Studied

► CHICKENS at the University of Georgia have time off from egg-laying to have electrocardiograms taken, Dr. Till Houston of the University has reported.

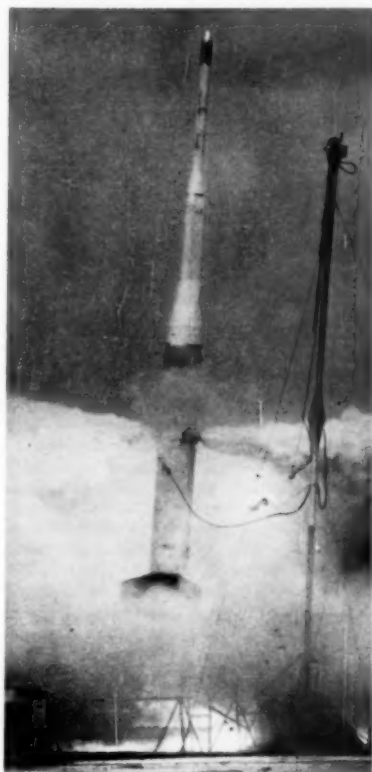
The electrocardiograms are being taken with the same kind of machine used on humans except that the electrodes, attachments usually placed on a person's arms, have been replaced with needles from hypodermic syringes.

The study is designed to find out about the fever chickens have in the summertime when the air temperature is more than 90 degrees. If they were not running the fever, they might be laying more eggs during the hot months.

The normal body temperature of a chicken is 107 degrees and during the hot weather the bird can not keep itself cool. Its temperature shoots up a few degrees above the normal 107.

The questions Dr. Houston hopes to answer are whether or not the fever affects the heartbeat and the heartbeat in turn affects egg laying and growth. If it does, the poultry industry would be interested in knowing what could be done about it.

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HIGHEST SPEED—The big-flying Lockheed X-17 blasts off on its journey into the ionosphere as spin rockets on its side, which will drop off after the launching, give it a stabilizing twirl. The Department of Defense reports the X-17, developed by Lockheed Missile Systems division in Van Nuys, Calif., has reached the highest speed ever achieved by an instrumented vehicle. The three-stage missile is described as the biggest and most powerful in existence using all solid propellants.

AERONAUTICS

Balloon Lifts Two Tons 104,000 Feet

► THE WORLD's largest balloon has lifted almost two tons of military equipment and instruments to an altitude of more than 104,000 feet.

This is the heaviest load ever carried by a balloon, the Air Force Air Research and Development Command, Baltimore, Md., reported. The helium-filled balloon, 200 feet in diameter, weighed 1,500 pounds, with a volume of 3,750,000 cubic feet.

The June 28 launching was part of a series of tests to learn about the atmosphere 20 miles and more above the earth's surface.

Dr. Morton Alperin, director of Advanced Studies, Pasadena, Calif., is in charge of the project.

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PUBLIC HEALTH

Excessive Smoking Bad

► **INCREASING AND CONSISTENT** evidence shows that excessive smoking is a cause of lung cancer, the U. S. Public Health Service, Washington, has reported, taking a firmer stand on the century's greatest medical controversy.

This statement, by Surgeon General Leroy E. Burney, was based upon the results of a review of 18 independent studies on smoking and health done by a study group set up by the Public Health Service in June, 1956.

Many independent studies "have confirmed beyond reasonable doubt that there is a high degree of statistical association between lung cancer and heavy and prolonged cigarette smoking," the Surgeon General said.

While the evidence is largely epidemiological in nature it must be remembered that many important public health advances in the past have come about through such statistical or epidemiological information, he added.

Other studies have also shown materials in tobacco smoke do cause cancers in laboratory animals, and that pre-cancerous body changes have been found in the lungs of heavy smokers.

"At the same time, it is clear that heavy and prolonged cigarette smoking is not the only cause of cancer," the Surgeon General reported.

Lung cancer is found in non-smokers as well, and the prevalence of the disease in

some population groups does not always coincide with the amount of cigarette smoking.

He recommended more research to isolate and remove the dangerous factors in excessive smoking, as well as more study of air pollution and other possible causes of cancer.

The statement is being sent, along with supplementary data, to state health officers and to the American Medical Association with the request that they distribute it to their members.

The Public Health Service statement has not gone unchallenged by the tobacco industry, however.

The report adds nothing new to what has been known about the cause of lung cancer, Dr. Clarence Cook Little, chairman of the scientific advisory board to the Tobacco Industry Research Committee, New York, has responded.

"It should be remembered that statistical association does not prove cause and effect," he said.

Over \$2,000,000 of independent research sponsored by the Committee has thus far produced no evidence that cigarette smoking or other tobacco use contributes to the origin of lung cancer.

The public should be as cautious in accepting a claim that a cause has been found for cancer as they have been in the past about accepting a claim for a cure, he concluded.

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methods have been devised not only to preserve the food value but to restore any depleted ingredients. Examples of this are flour, bread, milk and oleomargarine which have been fortified with additional vitamins and minerals.

The fourth myth is that if you have "that tired feeling" it is because you are suffering from a "subclinical deficiency" in your diet. This is defined as a condition in which a vitamin or mineral deficiency is suspected but unfortunately cannot be proved. Unfortunately for you, of course, but not for the food supplement promoters. Naturally, everyone gets "that tired feeling" at one time or another, but there is no basis for believing it is due to a subclinical deficiency. Your doctor is the best source of information about this one.

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PALEONTOLOGY

Worms, Insects, Spiders Share Common Ancestor

► **A PICTURE** of the common ancestor of today's insects, worms, spiders and crustaceans has been drawn by Dr. R. E. Snodgrass, a collaborator at the Smithsonian Institution in Washington.

In a report published by the Institution, Dr. Snodgrass traces crustacean changes and finds that the ancestor was more wormlike than buglike.

There is enough evidence, he reports, to indicate ancestors of the arthropods, all creatures with jointed legs, were closely related to ancestors of the annelid worms, and that both had a common ancestor originally.

The basic characteristics of the annelid-arthropod organization preserved today allow us to visualize the primitive annulated or segmented common ancestor "as a very simple, wormlike creature," Dr. Snodgrass says. It probably had a long segmented body, an alimentary canal extending through the length of its body and other highly technical features.

From this ancestor, the annelids evolved with little addition other than the development of parapodia, lateral bristles that help them to swim and burrow.

"By a different type of specialization for locomotion, members of another branch from the ancestral stock developed ventrolateral lobelike outgrowths of the body segments, and thus became walking animals. These primitive legs eventually evolved into the jointed appendages of modern arthropods," writes Dr. Snodgrass.

The wormlike Peripatus, living today in tropical America and Africa, is an animal quite close to this early stage.

Dr. Snodgrass points out that Peripatus is probably a direct descendant of the early lobe-legged creatures and has not progressed much beyond them structurally.

Several fossils of onychophorans, the group Peripatus belongs to, have been found in rocks formed a half billion years ago. This is the earliest date scientists have for the discovery of traces of higher animals.

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NUTRITION

Food Facts and Fables

Americans generally are the best fed and most well-nourished people in the world, yet many believe a number of myths about the food they eat which have been disproved.

► **NOW** is a good time to think about some of the facts and fallacies that surround the food you eat.

The American food supply is unequalled in volume, variety and nutritional value. In fact, overeating is becoming a bigger problem to some than under-eating.

But there are still many superstitions and myths about the values of certain foods. These false ideas are being used to promote many vitamin and mineral food supplements that are sometimes offered as cure-alls for serious diseases, the U. S. Department of Health, Education and Welfare warns.

Ideas like "fish and celery are brain food" or that "oysters increase fertility" are harmless, but when garlic pills are promoted for high blood pressure or grapes for the treatment of ulcers and cancer, the price of ignorance may come high.

There are four common false ideas about food that are used by practically all pro-

motors of health food preparations.

One is the myth that all diseases may be due to diet. There are many variations to this theme but in all of them something is sure to be missing in the diet which can only be supplied by the product in question. There are, it is true, certain diseases that are caused by dietary deficiencies, but they are rarely found in the U. S.

Myth number two is that soil depletion causes malnutrition. The promoters of this idea insist that repeated cropping has so impoverished our soil that foods grown on it are nutritionally inferior. Actually, when the soil gets too depleted, the crop yield will be small, but what crops there are will be of the normal nutritional value.

Myth number three is the one of over-processing. This is an exaggeration of the fact that some methods of processing and cooking do reduce some of the vitamins and minerals. But modern food processing

BIOLOGY

Enzyme Aids Healing

Scientists have found a new substance, a plant enzyme, that can speed treatment and healing of burned tissue and enables the surgeon to make necessary skin grafts.

► AN ENZYME taken from the juice of a fig tree now speeds the treatment of burned human skin, one of mankind's most painful and dangerous injuries.

Named ficin, the enzyme literally dissolves away the damaged tissue and can completely clean a third-degree burn in three to five days, Dr. James F. Connell, director of burn research, St. Vincent's Hospital, New York, told SCIENCE SERVICE.

It has been successfully used on over 300 burn patients during the last three years.

The process of clearing away the burned tissue is called debridement and must be completed as soon after the injury as possible so that the damaged area will be ready for skin grafts.

The enzyme is applied to the burned area either as a paste or solution. It works best on the most severe burns.

It does the job by dissolving the damaged skin protein and can debride a third-degree burn faster than a deep second-degree burn, Dr. Connell said.

With only partially damaged tissue, the enzyme treatment takes up to 12 days.

Ficin is the best of 25 or 30 enzymes which have been tried experimentally in the past few years but scientists hope to find one which works even faster.

While the damaged tissue exists around the wound, infection is always a problem and enzyme-treated patients receive continuous doses of antibiotics to keep infection down before the wound is closed with skin grafts.

An ideal treatment would be an enzyme which could do the debridement, or removal of damaged skin, within 24 to 48 hours, leaving the burned area cleared of all damaged tissue and ready for grafting.

Another enzyme which may be able to do this has just passed its animal tests at Walter Reed Army Institute of Research, Washington, and will soon be tried on humans.

In guinea pigs, the enzyme does the job within 24 to 48 hours. If it works as well

on humans, it may turn out to be close to the ideal burn treatment.

Technically known as *clostridium histolyticum*, the enzyme is harvested from a type of bacteria similar to those which cause gas gangrene. After 24 to 48 hours contact with the protein-dissolving enzyme, the damaged tissue can be gently wiped away and the area is ready for grafting.

But extensive trials are needed to see if the enzyme will be safe and effective for human burns.

Maggots were used to debride burns during the World War I period, although the treatment was not too popular in this country for obvious reasons. The maggots were sterilized and placed in a packing around the burn. They excreted a chemical substance called urea which dissolved the tissue in much the same way the enzymes do.

Surgery is now the standard method of debriding burns. It accomplishes the job completely, but it is not without danger. A series of blood transfusions is frequently needed and the procedure adds even more trauma to the injured area.

For mass casualty treatment, surgery would be impossible but a quick and effective enzyme treatment could be lifesaving.

Science News Letter, July 20, 1957

MEDICINE

Polio Immunity Increases Without Salk Vaccine

► EVEN WITHOUT SALK shots, people are naturally becoming more and more immune to polio, Drs. Robert L. Vought, Bristol Laboratories, Inc., Syracuse, N. Y., and Morris Greenberg, New York City Department of Health, report in the *Journal of the American Medical Association* (July 6).

Natural immunization against polio occurs when the virus is spread from the gastrointestinal or respiratory tract of either patients or carriers to other people. These people, in turn, become carriers and usually develop immunity without developing active cases of the disease.

Since 1915 the polio death rates among successive generations of children under 15 years in New York City, whose statistics were used for the study, has been reduced 75% to 90%, the authors report. There were no artificial methods of immunization such as Salk vaccine until 1954, so the reduction in death rate must have come from increasing natural immunization and better medical care and sanitation.

On the basis of their study which included the years 1915 through 1944, the scientists predict a further drop of another 75% to 90% by 1969. The Salk vaccine may cause an even greater drop than this, but even if it does not, the outlook for future generations as a result of natural immunity is "quite encouraging."

Exactly how natural immunity develops in a population is not known, although it is known that, as more people are exposed to the virus, more develop natural immunity and fewer develop actual cases of polio.

Science News Letter, July 20, 1957



SILENT SOUND WAVES—Sound waves almost twice as high in frequency as human ears can detect 28,000 cycles a second, are being used by Lockheed Missiles Systems scientists to bore precise holes in very hard ferrite materials. The magnetic drill is operated by the ultrasonic frequency put out by an oscillator. Arthur S. Knapp, research laboratory analyst at Sunnyvale, Calif., wears magnifying glasses to watch the drill make a hole measuring only five-thousandths of an inch. The ferrites are made into magnetic memory cores for electronic computers and data storage devices.

MEDICINE

Need Live-Virus Vaccine To Stop Spread of Polio

► **LIVE POLIO** virus vaccine, administered by mouth, is potentially more effective in wiping out polio than the presently used Salk vaccine shots, Dr. Albert B. Sabin, University of Cincinnati College of Medicine, reported to the fourth International Poliomyelitis Congress meeting in Geneva, Switzerland.

The only way to wipe out polio is to make the human intestinal tract immune to reinfection, he said.

The live vaccine to do this can be made from suitably attenuated or de-vitalized strains of polio virus. It is free from allergic reactions, cheap and simple to use for mass application.

"The real issue that remains to be resolved concerns its safety, safety not only as regards the viruses that are initially swallowed but also of those that may be excreted in changed form and spread to others," Dr. Sabin said.

The Salk killed-virus method of preventing polio is about 75% effective but tests have shown it does not alter the intestinal tract's susceptibility to infection and does not affect the spread of polio in the community.

Just waiting to see how long killed-virus vaccine immunity will last might deprive many people of the protection that earlier trials of orally-administered live-virus vaccine might provide.

But the decision is "not an easy one," Dr. Sabin admitted. Tests of the live-virus vaccine would have to be done on tens or hundreds of thousands of people to see if the vaccine was as safe in practice as it is in theory. This involves a "certain risk that is difficult to calculate."

A trial would be justified in some areas, he believes. Countries in which the use of the killed-virus vaccine is impractical or the polio viruses are already known to be spreading extensively in the population might make the trial.

Science News Letter, July 20, 1957

PUBLIC SAFETY

Air's Atomic Debris Shows Seasonal Fuel Use

► **SENSITIVE TESTING** of the air's atomic debris since the first H-bomb explosion shows the difference in the amount of fuel Americans use in winter and summer, two scientists at the Naval Research Laboratory have found.

Studies of radioactive carbon 14, formed when neutrons released in thermonuclear detonations react with atmospheric nitrogen, revealed the increased burning of fossil fuels during winter.

R. L. Patterson Jr. and I. H. Blifford Jr., the NRL investigators, also found scientists of the future will have to watch their step when they try to date objects from this decade by the radioactive carbon 14 method: results can be expected to be incorrect because of the carbon added to the atmos-

phere since 1952 when the first H-bomb was exploded.

One way of dating once-living objects is to measure the amount of radioactive carbon 14 they contain. This carbon is assumed to have formed at a steady rate by the action of cosmic rays on atmospheric nitrogen, and it is measured by extremely sensitive methods.

Mr. Patterson and Mr. Blifford wanted to find out if there was any detectable increase in the air's carbon 14 due to hydrogen bombs. Using as one standard the carbon from tree rings formed in a cedar in Yosemite Valley from 1900 to 1905, they measured 7.73 counts per minute.

Since 1952, the count has increased to about eight each minute, they report in *Science* (July 5). Although this increase is very small, it is detectable and very important to carbon 14 measurements.

The extra amount means the assumption of a steady rate of carbon 14 formation does not hold true for any living objects after 1952. Since the fuel burned during winter comes from fossils of a long-ago age, it does not add any carbon 14 to the atmosphere but dilutes the amount already there. That is the reason the measuring standard was chosen from early this century, before fossil fuels, such as coal and oil, were burned in great quantities.

Science News Letter, July 20, 1957

BACTERIOLOGY

Screw-Cap Bottles Pose TB Threat in Britain

► **UNSCREWING** the cap on a culture bottle used to diagnose tuberculosis may be all it takes to accidentally infect laboratory technicians with the disease, Dr. A. J. H. Tomlinson, Public Health Laboratory Service, County Hall, London, England, reports in the *British Medical Journal* (July 6).

Screw-capped bottles for bacterial cultures are commonly used in routine diagnostic practices in laboratories in England. When active TB germs are grown in them, many times the inside rim of the bottle becomes contaminated with a thin film of bacterial growth.

When the bottle is opened, the film of broth culture is broken and some of the resulting droplets are small enough to form aerosols, or fine mists, which dissipate in the air.

The particles of bacterial material released are extremely small and could quite easily be inhaled and thus carried into the many tiny recesses of the lungs, Dr. Tomlinson said.

Tests of the action were made with culture bottles containing other less dangerous bacteria and showed that the majority of bottles with infected rims produced a bacterial cloud on opening. However, bottles with apparently dry rims were rarely infected.

A possible safeguard is the use of a plastic-like film over the mouth of the bottle. The bottle can then be opened by piercing the plastic with a hot wire and resealing the bottle with another piece of plastic.

Science News Letter, July 20, 1957

IN SCIENCE

FOOD TECHNOLOGY

French Fried Sweet Potatoes Made

► **FRENCH FRIED** sweet potatoes, developed by the U. S. Department of Agriculture's research division in Philadelphia, are described as a "savory high-quality food product" combining a new flavor appeal with frozen french fry cooking and serving convenience.

USDA researchers also tested deep-fried sweet potato chips, julienne strips and diced potatoes. They report that after five months storage, in the dark at room temperature, these potential snack foods were still crisp and flavorful.

Science News Letter, July 20, 1957

FORESTRY

Ultrasonics Detects Flaws in Trees and Wood

► **ULTRASONICS** may soon be used to inspect trees for hidden diseases, J. S. Waid and M. J. Woodman, Merlewood Research Station, Lancashire, England, report in *Nature* (July 6).

The ultrasonic equipment is already in use to detect flaws in wood, and further developments may enable foresters to use it for spotting fungus diseases that slowly destroy good timber.

For flaw detection, both sides of the wood to be tested are smoothed and coated with a coupling agent, such as petroleum jelly, to insure good contact between the wood and the probes of the machine.

The high frequency sound waves generated by the equipment are then passed through the wood and any flaws present reduce the amount of ultrasonic energy penetrating the bad area.

Since bark has been found to stop the ultrasonic waves, it must first be stripped off the sampling area if testing is done across the grain of the wood.

Even slight defects in the wood cause a considerable reduction in the amount of ultrasonic energy measured, and no transmission at all occurred through a two-inch piece of red pine infected with dry rot. In sound seasoned beech, however, the ultrasonics could be transmitted for four feet.

The most important development of this new technique would be to reduce the economic losses of timber that result from disease, the authors report.

Valuable trees are often lost because such fungal infections as heart and butt rots go undetected for many years. If the disease were noticed early on a plantation, a change in the future management of the trees could be made. The loss on imported and stored timber could also be reduced with a speedy method of detecting the decay in bulk timber.

Science News Letter, July 20, 1957

THE FIELDS

PSYCHOLOGY

Parent May Make Child Delinquent

► WHEN a child becomes a delinquent, it may be because unconsciously the parents, and particularly the mother, forced him into this behavior.

This is indicated in a report to *Behavioral Science* (July) by Drs. Claire Russell and W. M. S. Russell of the department of zoology, University College, London, England.

Most parents are surprised by behavior in their children which is directly dictated by their own conscious or unconscious wishes.

Everything depends upon the relationship between the two parents themselves—the happier they are together, the better for their offspring.

But when the dominance-submission relation between parents is one in which, on both sides, fear and rage are uneasily balanced, each parent may displace or redirect both attack and revulsion onto the child.

Each parent will attempt to interpose the child between himself or herself and the partner and to use him as a weapon as well as a scapegoat in their continual conflict.

When a parent seeks to dominate a child either by rigid control or smothering "affection," the parent forces upon the child a rigid pattern of behavior and prevents him from developing independence. The behavior of the child in this case may not look at all like submission. It may take the form of compulsive rebelliousness.

It may even seem to be domination of the parent as in the spoiled child who grows up to be a delinquent.

The bad behavior of the child then becomes compulsive and removed from control by the intelligence. He responds to all authority with rebelliousness and aggression.

Science News Letter, July 20, 1957

PHYSIOLOGY

Controlled "Climate" For Studying Body

► A SEALED-OFF chamber for studying the body processes of human beings kept in a controlled "climate" for long periods of time is now ready for full-scale operation at the National Institute of Arthritis and Metabolic Diseases of the U. S. Public Health Service in Bethesda, Md.

The "metabolic chamber" has been designed to give previously unavailable information about how humans use food, air and water in the process of living.

The person under observation will live in the chamber for periods up to several days, while sensitive instruments record the amount of air he breathes and the precise

amounts of food and liquids he ingests. Expired air as well as other body wastes will be recaptured and continuously analyzed.

The chamber is large enough to permit the subject to move around, work at a desk, or exercise on a treadmill, and it contains a comfortable bed, commode and refrigerator.

The chamber allows scientists to study the total energy balance of an active human living under comparatively normal conditions. Answers to fundamental questions of energy metabolism that are not now well understood may be found.

High on the list of experimental subjects will be persons suffering from overweight and other conditions in which various tissues are gained or lost from the body.

Researchers hope the new chamber may provide a solution to the age-old problem of why some heavy eaters remain slender, while some light eaters gain too much weight.

The studies will be carried out under the supervision of Dr. G. Donald Whedon, chief of the metabolic diseases section of the Institute.

Science News Letter, July 20, 1957

TECHNOLOGY

Super Fuel for Air Force Being Produced

► HIGH-ENERGY "super" fuels that increase jet aircraft ranges up to 50% and eliminate high altitude engine failures have gone into semi-commercial production for the Air Force, it has been revealed.

A spokesman for Olin Mathieson Chemical Corporation, developer and producer of the new chemical fuels, said small quantities of the fuels already have been shipped to the Air Force from a semi-commercial plant at Niagara Falls, N. Y. A plant designed for full-scale production is expected to be in operation within 20 months.

Dr. L. K. Herndon, head of the high-energy fuels operation, said the compounds are based on derivatives of boron, a non-metallic element previously known chiefly as the main ingredient of borax washing compounds and boric acid. He said the new fuels meet all Air Force requirements for ultra high energy as well as for easy and safe handling features.

Brig. Gen. C. H. Mitchell, deputy production director of the Air Force's procurement and production directorate, described the delivery of the first high energy fuels as a break-through signifying greater strength for the United States. Speaking for the Air Force, Gen. Mitchell said the fuels would enable jet aircraft engines to function efficiently at high altitudes where low wind resistance would make flying faster.

The new "exotic fuels" are planned for use in aircraft and are not being adapted to automobile or other surface transportation. Olin Mathieson executive vice president W. C. Foster has said that he expects the fuels to be the forerunners of what will amount to a \$1,000,000,000 industry within 10 years.

Science News Letter, July 20, 1957

BIOLOGY

Cockroaches May Be Spreading Polio

► COCKROACHES may be spreading polio by harboring the polio virus in their bodies and then transferring it to men's food, Drs. Robert G. Fischer, University of North Dakota, Grand Forks, and Jerome T. Syverton, University of Minnesota, Minneapolis, have found.

Polio, as well as encephalomyelitis or sleeping sickness, is most probably transmitted by mouth from food, water or other substances that have been contaminated by human waste. However, the persistence of the virus as well as other indications also point to its being carried by insects, the scientists report.

Flies have already been incriminated as possible polio carriers. Cockroaches may be equally dangerous since in many parts of the world they are more closely associated with man's food and waste than are flies.

To test the roach's ability to carry virus, they were strapped to corks with cellulose tape and force fed quantities of active Coxsackie virus from a blunt needled hypodermic syringe.

The researchers found that for as long as 20 days after a single meal of the deadly virus the cockroaches retained enough of it to paralyze and kill test mice later exposed to the virus.

Infected cockroaches may either carry the disease themselves from host to host, or they might be eaten by wild mice which later excrete the viruses which are viable, the investigators report in the *Proceedings of the Society for Experimental Biology and Medicine* (June).

Science News Letter, July 20, 1957

TECHNOLOGY

Automotive Gas Turbines Ready for Military Use

► GAS TURBINES are now "practical and feasible" for use in heavy duty and military vehicles, engineers William A. Turunen, Robert Schilling and E. L. Baugh of General Motors told the Society of Automotive Engineers during its meeting in Atlantic City, N. J.

The goal was to create a powerplant that could haul heavier loads at higher speeds with lower maintenance, and it seems to have been reached with the development of the automotive gas turbine. In tests of gas turbine capabilities, as contrasted with standard truck engine performance, the gas turbine showed a 27.5% improvement in acceleration tests and a 17% improvement in ability to take a grade.

At top speed on the highway, the turbine engine was found to operate with fuel costs "the same or less than those of production piston engines," the engineers reported.

Since the gas turbine operates much like a jet engine, special alloys are needed for the "hot" parts of the powerplant. This requirement is the main drawback to production, but is yielding rapidly to developments in new metals.

Science News Letter, July 20, 1957

EDUCATION

Junior Scientists Start Early

Kindergarten is a good place to start encouraging future scientists. Educational experiments and science fairs are being introduced in elementary grades with surprising success.

► IT IS A LITTLE HARD to believe, but kindergarten is not too early to start being a scientist! In fact, some experts think that youngsters should begin having fun with science in nursery school or, better yet, even earlier at home.

In short, the people who are looking for the next generation of scientists have concluded that you have to start them young. In one survey, of 387 National Science Fair finalists, nearly 10% report their first interest in science was sparked by the time they entered elementary school. More than 50% feel their interest had already been captured by the time they were in sixth or seventh grade.

So, on the basis of a variety of studies, surveys and good guesses, educational experiments are being set up to provide as much encouragement as possible to hoped-for little scientists and technicians. These experiments are not limited to special schools or classes for gifted children, but, perhaps even more important, are geared to stimulate the interest of average children. No one can know how many of these may turn out to be productive scientists or the competent technicians and laboratory assistants we need in such numbers.

Exceptionally Talented Children

Exceptionally talented children are "naturals" as far as scientific interest is concerned, and probably their chief need is for an abundance of attractively presented information and experience. According to Dr. Paul Witty of the International Council on Exceptional Children, these children have "insatiable curiosity" and "unusual interest in such things as number relations, atlases and encyclopedias."

Christopher B. is an example. His favorite books, from the age of two until he taught himself to read, were the dictionary and the telephone book. At six he knows an astonishing amount about paleontology and pursues his subject through the *Encyclopedia Britannica*, H. G. Wells' *Outline of History*, and any other expert works he can find. No one would bet on his being a paleontologist when he is 30, however, for his interests already include astronomy, mathematics, and simple chemistry and physics. But, if he is not frustrated too badly somewhere along the way, the prospect of his being some sort of highly creative scientist is excellent.

Or take Robert Strom, who has won such an improbable amount of money on the CBS-TV quiz program. He is ten years old, in fifth grade, and has been absorbing his amazing fund of scientific knowledge from many sources including his brilliant older

brother. In addition, his parents, brother and teachers have encouraged him to experiment with the things that interest him, and have tried to keep his activities as balanced as possible.

So, gradually, we are learning what average and above-average children need, very early in life, to give them the best opportunity to mature at their highest potential level.

Science in the Schools

During the school year a visitor to New York or Washington or Emporia, for instance, can see science-in-action among surprisingly well-informed kindergarteners or among small boys and girls in the elementary grades. Simple laboratories, imaginatively adapted to the interests and abilities of these age groups, are giving young children the opportunity to show that they can readily grasp simple scientific concepts and capably demonstrate them.

In a New York school, a little girl brought in some peanuts from her grandmother's plantation in the South. The children and the teacher talked about how

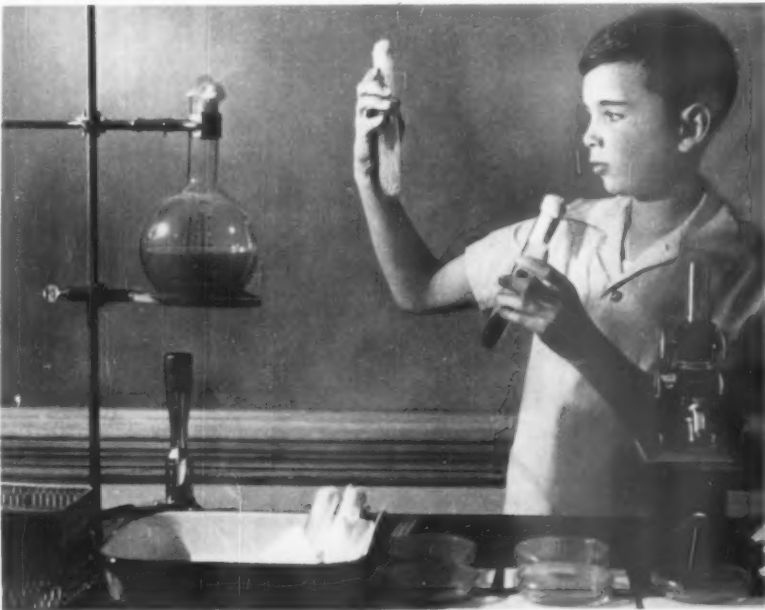
peanuts grow, what peanuts can be used for, and how. One question flowed into another until the morning was climaxed by borrowing a food grinder from the cafeteria kitchen so they could make and eat their own peanut butter then and there.

In Emporia, youngsters cook up such things as fudge, using lab accessories like beakers, ringstands and Bunsen burners as familiar and useful tools.

They distill water, learn about frictional electricity by playing with balloons, and know something about air pressure after an experiment with an egg and a milk bottle.

In a Washington kindergarten, children are having a wonderful time seeing what prisms, magnets, air, water and heat can do. Second and third graders have tracked down the characteristics of about 35 chemical elements, and they can claim a nodding acquaintance with atoms and molecules.

Elementary schools even have their own science clubs, affiliated with Science Clubs of America like the high school clubs, and their own science fairs. Some cities are finding that they must now have large pre-fairs for the junior element, as well as full scale science fairs for high school students. In the junior fairs, there are exhibits on the "how" of simple mechanics, gravity, fire, a thermometer, a compass and the solar system. The story of teeth, seed germination, prehistoric animals, volcanoes, weather, and



BEGINNING SCIENTIST—This youngster, shown becoming familiar with the potentials of chemistry at an early age, is now a grown man. This is a picture of Walter Shropshire of Washington, D. C., taken when he was a fifth-grade student. Today, he is completing his academic studies leading to a Ph.D. in biochemistry at George Washington University.

how a fish breathes—to name just a few of the hundreds of subjects children find it rewarding to explore—are all on display.

Because it is being made possible for these youngsters to think of science as an integral and enjoyable part of their experience from the very beginning of their education some of them are likely to accept naturally the idea of devoting their lives to it.

No way has yet been devised to predict the future careers of children, at least not with any degree of certainty and not before late high school or even college years, but such an atmosphere of stimulation tries to insure the full development of whatever scientific talent a child may have. It is also designed to allow those with a special bent toward eventual careers in science to explore some possibilities and try on a few "for size."

Tests for Scientific Aptitude

At such tender ages, of course, the "scientific" interest is ordinarily confined to a special subject, or series of subjects, and does not involve any realistic notions of a scientific career. But the initial interest in beetles or butterflies or stars or rocks may—and often does—lead to a wider and more intense interest in later years.

Tests are now being developed to try to identify gifted students and potential scientists by the time they reach junior high school. Dr. Harold A. Edgerton, and Dr. Stuart H. Britt, are authors of the aptitude examination designed each year for the Science Talent Search for the Westinghouse Science Scholarship. Dr. Edgerton has designed a test to facilitate finding potential scientific and technical manpower at the sixth and seventh grade levels.

By scoring children's experience in science-related activities and their science vocabulary, Dr. Edgerton believes some children with potential for science can be discovered and given particular encouragement. This would include a chance for increased activities in science, such as reporting to their classmates on experiments they have done and on science news, and "encouragement to prepare exhibits for classroom, school and regional science fairs," says Dr. Edgerton.

However, the years during which the majority of youngsters become "really excited" about science come between the ages of 12 and 15, as shown by SCIENCE SERVICE-Science Clubs of America studies of Science Talent Search winners and National Science Fair finalists. This is when they begin to think seriously about college training in that general direction, or even in a highly specialized field.

Critical Years

Eighth and ninth grades have been shown to be a critical point for these college and career decisions, and many schools are now testing the academic aptitude of all pupils in these grades. Measurement of other aptitudes and attitudes are equally important, of course, in identifying and stimulating potential scientists and technicians, and skilled guidance is particularly valuable at

this point. Many schools are now emphasizing individual counseling at eighth and ninth grade levels, since it is during these grades that students first choose to study subjects essential to their later educational and professional development.

It becomes increasingly clear that parents, schools, universities, communities, industries, government, foundations and scientific groups—and anyone else concerned with developing America's scientific skills and talents—must all work together in searching out and stimulating this ability almost from the cradle. Apparently "Yankee ingenuity" is more than a myth, for bright ideas and imaginative solutions to local problems are springing up all over the country, to be adapted and modified and improved from place to place.

Interest is running very high in some towns, and the younger generation is responding with enthusiasm to such activities as science fairs.

As a matter of fact, these efforts are so successful that at one fair a mother, obviously weary from sitting up with a science fair project and its tireless young experimenter, looked quizzically at a poster on the school bulletin board, announcing a new organization to encourage science-youth activity—then she tottered down the hall, murmuring "Encourage! . . . I wish somebody would tell me how to DIScourage it once it gets started!"

Science News Letter, July 20, 1957

ENGINEERING

Size of Raindrops Measured Exactly

► THE SIZE of raindrops is being measured accurately and automatically using a device invented by A. Nelson Dingle, meteorologist at the University of Michigan's Engineering Research Institute, Ann Arbor.

The instrument is called a "raindrop



RAINDROP MEASURER—University of Michigan meteorologist A. Nelson Dingle, left, and technician Arvy W. Wagner watch the whirling arms of an instrument they developed to measure the exact diameter of raindrops.

spectrometer," and it can record the sizes of drops above one-hundredth of an inch in diameter. It consists mainly of two black boxes mounted at the ends of two arms and associated electronic equipment.

One box contains a light source, the other a photoelectric cell. As the arms whirl around three times a second, the photocell "watches" a spot in the light beam. When a raindrop passes through that spot, the amount of light seen by the photocell indicates the drop's size.

Because it is spinning so rapidly, the instrument scans a path about six yards around every second, thus observing more drops than if the arms were stationary.

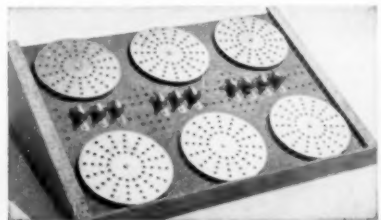
After a test run, dials on the electronic equipment show how many drops of each size fell in the sampling area. By measuring as many as 180,000 of them an hour, Mr. Dingle and his associates hope to learn the exact distribution of drop sizes.

It takes a million average cloud droplets to form the average raindrop, and meteorologists are interested in how millions of billions of droplets are combined into billions of raindrops during a single storm in nature.

In developing the instrument under a grant from the Air Force's Cambridge Research Center, the Michigan scientists devised a slender needle that dripped drops of a certain size for use in testing and calibrating the spectrometer.

Science News Letter, July 20, 1957

Can you think faster than this Machine?



Control Panel of GENIAC set up to do a problem in check valve research.

Be careful before you answer. GENIAC, the first electrical brain construction kit, is equipped to play tic-tac-toe, cipher and encipher codes, convert from binary to decimal, reason in syllogisms, as well as add, subtract, multiply and divide. Specific problems in a variety of fields—actuarial, policy claim settlement, physics, etc., can be set up and solved with the components. Connections are solderless and are completely explained with templates in the manual. This covers 33 circuits and shows how new ones can be designed.

You will find building and using GENIAC's a wonderful experience; one kit user wrote us: "This kit has opened up a new world of thinking to me." You actually see how computing, problem solving, and game play (Tic-tac-toe, nim, etc.) can be analyzed with Boolean Algebra and the algebraic solutions transformed directly into current diagrams. You create from over 400 specially designed and manufactured components a machine that solves problems faster than you can express them.

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Books of the Week

For the editorial information of our readers, books received for review since last week's issue are listed. For convenient purchase of any U. S. book in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N. Street, N. W., Washington 6, D. C. Request free publications direct from publisher, not from Science Service.

AMERICAN INDIANS—Compiled by Walter M. Daniels—H. W. Wilson, The Reference Shelf, 219 p., \$2.00. A collection of 44 articles and speeches telling the history of the American Indian and his present status.

THE CHEMISTRY OF PLANTS—Erston V. Miller—Reinhold, 174 p., \$4.75. A reference book for research workers in medicine, agriculture and food processing as well as chemists.

THE DEFECT SOLID STATE—T. J. Gray and others—Interscience, 511 p., illus., \$11.00. A presentation of the philosophy developed in a consideration of the chemical-physics of the solid state from the point of view of the quantity and quality of the various defects which may be present.

ELASTIC WAVES IN LAYERED MEDIA—W. Maurice Ewing, Wencelas S. Jardetzky and Frank Press—McGraw-Hill, Lamont Geological Observatory Contribution No. 189, 380 p., diagrams, \$10.00. An outgrowth of a plan to make a uniform presentation of the investigations on earthquake seismology, underwater sound and model seismology.

HOW CHILDREN LEARN: An Educational Psychology—Arden N. Frandsen—McGraw-Hill, 546 p., illus., \$5.50. Applying the general principles of educational psychology to the problems of understanding and teaching elementary school children.

THE INDUSTRIAL CHEMISTRY, PROPERTIES, AND APPLICATION OF SILICONES—Charles E. Reed—American Society for Testing Materials, 47 p., illus., paper, \$1.50. Reviewing the basic structural chemistry of the silicones and discussing how this chemistry explains their properties as a group of engineering materials.

INTRODUCTION TO ELECTRICAL APPLIED PHYSICS—N. F. Astbury—Philosophical Library, 241 p., diagrams, \$10.00. A text for a field that has grown up in the last 25 years or so and is neither physics nor engineering but borders on both.

INVESTMENT IN CREATIVE SCHOLARSHIP: A History of the Fellowship Program of the American Association of University Women 1890-1956—Ruth W. Tryon—American Association of University Women, 228 p., illus., \$3.50. The first AAUW fellow was chosen in 1890.

THE JAPAN SCIENCE REVIEW: Vol. 1, No. 1, MINING AND METALLURGY—Kenji Ono, Ed.—Joint Publication Committee, Japan Science Review, 188 p., paper, \$1.50 per issue, published biannually. A journal of abstracts published in English.

MAGNETIC-AMPLIFIER CIRCUITS: Basic Principles, Characteristics and Applications—William A. Geyger—McGraw-Hill, 2d ed., 394 p., diagrams, \$7.00. A reference work intended primarily for practical use.

MATHEMATICS FOR EVERYMAN: From Simple Numbers to the Calculus—Egmont Colerus, translated by B. C. and H. F. Brookes—Emerson Books, 255 p., diagrams, \$3.95. An attempt to combat the general aversion for mathematics.

MOLES AND SHREWS—Charles L. Ripper—Morrow, 64 p., illus. with drawings by the author, \$2.50. A charming book for children.

NAVAL REACTOR PROGRAM AND SHIPPINGPORT PROJECT: Hearings Before the Subcommittees of the Joint Committee on Atomic Energy—Carl T. Durham, Chairman—Govt. Printing Office, 101 p., diagrams, paper, 30 cents. Making public for the first time detailed information on the

Naval Reactor Program and Shippingport Project.

NUCLEAR ENGINEERING—Charles F. Bonilla, Ed.—McGraw-Hill, 850 p., illus., \$12.50. Giving the basic principles involved in the design of nuclear reactor cores and power plants. Each field is covered by one of 12 experts.

OWYHEE: The Life of a Northern Desert—Earl J. Larison—Caxton, 357 p., illus. with drawings by Don Fritts, \$5.00. Telling how animal and plant life has adapted itself to survive in this desert just south of Nampa, Idaho, less than 18 miles from the place where Idaho potatoes are plentiful.

PESTICIDE HANDBOOK 1957—Donald E. H. Frear, Ed.—College Science Publishers, 9th ed. rev., 216 p., paper \$1.50, cloth \$3.00. Listing 6,234 commercial pesticides with information on their active ingredients, uses and manufacturers.

PHYSICS—Erich Hausmann and Edgar P. Slack—Van Nostrand, 4th ed., 722 p., illus., \$8.00. A college text especially for those who major in science and engineering. Emphasis is on principles, and methods, and description of devices such as measuring instruments, heat engines and electrical machines has been omitted or curtailed.

PLAY WITH SEEDS—Millicent E. Selsam—Morrow, 96 p., illus. with drawings by Helen Ludwig, \$2.50. A book for children telling about seeds and their uses and describing experiments that can be done with them.

ROCKETS, MISSILES, AND MOONS—Charles Coombs—Morrow, 256 p., illus., \$3.75. Telling what has happened in this field and looking forward to what may happen in the future.

STERILIZATION IN FOOD TECHNOLOGY: Theory, Practice and Calculations—C. Olin Ball and F. C. W. Olson—McGraw-Hill, 654 p., illus., \$16.00. Intended as a guide and reference work for all who work in the field of food preservation.

TRAFFIC SPEED AND VOLUME MEASUREMENTS—Claude A. Rothrock and others—Highway Research Board, Bulletin 156, 44 p., graphs, paper, 90 cents. Discussing such factors as purpose of driving, weather, time of day and presence of stalled car or accident and their effect on the speed of travel flow.

TREES AND SHRUBS FOR THE SOUTHERN COASTAL PLAIN—Brooks E. Wigginton—University of Georgia Press, 154 p., illus., paper, \$2.50. To guide the southern gardener in the selection of plant materials.

USA IN NEW DIMENSIONS: The Measure and Promise of America's Resources—Thomas R. Carskadon and George Soule with graphics by Rudolf Modley—Macmillan, A Twentieth Century Fund Survey, 124 p., illus., paper, \$1.50. A graphic presentation of what we are and what we have, use, and need.

YOUR FOOD AND YOU—Herbert S. Zim—Morrow, 64 p., illus., \$2.50. A child's book on what and how you should eat for health and enjoyment.

ZOO DOCTOR—William Bridges—Morrow, 126 p., illus. with photographs by Sam Dunton, \$2.95. A charming book for young people (and their elders) about the variety of activities of a veterinary doctor in a zoo.

Science News Letter, July 20, 1957

AERONAUTICS

Clay Wings May Solve Aviation Problems

► "WINGS OF CLAY" may be the answer to problems of high-speed aviation of the future.

This possibility has been suggested in research by F. R. Shanley, W. J. Knapp and R. A. Needham, engineers at the University of California at Los Angeles, who have made a preliminary study of the use of prestressed ceramics for aircraft and missile structures.

A report made to the sponsoring Air Force group has recently aroused the interest of the aircraft industry.

At very high speeds aerodynamic heating will raise aircraft surface temperatures beyond that which can be withstood by available metal alloys, the investigators pointed out.

Ceramic materials can withstand very high temperatures, but under normal conditions are too brittle for aircraft structures. Prestressing by means of tension cables overcomes this difficulty.

The UCLA engineers designed and tested ceramic wings under simulated flight loads. Results indicated possibilities worth further investigation. Additional studies are planned for the near future.

The report also suggested that graphite was a possible answer to the aircraft "heat barrier." The strength of graphite actually increases with temperature up to about 4,000 degrees Fahrenheit, they pointed out.

Science News Letter, July 20, 1957

AGRICULTURE

Plant Specialist Has Four Tips for Lawn Care

► HERE ARE four tips from Prof. P. A. Miller, plant disease specialist at the University of California at Los Angeles, on how to keep your lawn healthy.

1. Spongy turf favors growth of organisms that attack grass. Close mowing, removal of grass clippings and chemical or mechanical turf renovation will prevent or overcome this condition.

2. Yellow or off-color grass may be due to lack of nitrogen or iron. Application of nitrogen fertilizer and soil applications or leaf sprays of iron salts or solutions will correct these deficiencies.

3. Annual blue grass and, to some extent, Bermuda grass may lose color as a result of smog injury.

4. Mechanical injuries, even cuts from mowing, may make grass susceptible to infection. Watering should be deferred several hours after mowing, and fungicides for disease control applied.

There's no cure-all for lawn ills. Just as human ills require specific remedies so do turfgrass maladies.

There is one compound on the market, he reports, which combines several fungicides with iron salt, a wetting agent, and a nitrogen fertilizer. Thus several fungus diseases and some nutrient deficiencies are controlled and grass growth is promoted.

Science News Letter, July 20, 1957

PUBLIC SAFETY

Learn to Swim for Safety

► **SUMMER VACATIONERS** who intend to "beat the heat" by going swimming or boating are being reminded by the American Red Cross that staying alive this summer is more important than staying cool.

A list of 10 sensible water-safety rules are suggested by A. W. Cantwell, national director of the Red Cross safety services, who says, "being safe in, on, or near the water is your personal responsibility. Saving lives starts with saving your own. You can be safe if you make every effort, and you can save others, too."

About 90% of the persons who take advantage of swimming facilities in the U. S. today are poor swimmers or do not swim at all.

1. Learn to swim. You cannot think of a better sport to save your life. With competent instructors, learning to swim can be quick, easy and fun.

2. Always swim with another person who can help you if you get in trouble.

3. Swim in a safe place, usually indi-

cated by the presence of life guards.

4. Know the area. Before diving, make sure the water is deep enough and that there are no hidden objects as submerged rocks, or undertows.

5. Respect the water and know your limitations. Water is a good friend but can be a deadly enemy. Do not go beyond safe limits or your ability.

6. Do not swim right after eating or when over-tired or overheated.

7. Try to remain calm in case of trouble. Assume a face-up floating position and slowly move your hands and feet under water.

8. Keep safety equipment in your small boat or canoe. Wear a life vest unless you are a really expert swimmer.

9. Stay with your boat. Most small craft float even when filled with water.

10. Do not over-power your boat. A too-powerful motor makes the boat hard to control and may lead to upsets.

Science News Letter, July 20, 1957

PSYCHOLOGY

"Practice" Cures Habit

► **ABOUT HALF** of a group of college student nailbiters cured themselves of the habit or showed marked improvement through what psychologists call "negative practice."

The treatment consisted of standing before their bathroom mirrors while they went through the motions of biting their nails without, however, actually biting them. During the pantomime, they repeated "This is what I am supposed not to do." This was continued for half a minute or so. Then they returned to their study or other activities for an hour. Then another practice session.

After three months of the self-treatment, nearly two-thirds of the 57 students had broken the habit or improved. But the record did not look so good after eight to ten months. Then the cures had dropped to about half the group.

In reporting the experiment in the *Psychological Newsletter* (July-August), Dr. Max Smith of City College of the City of New York theorized that this form of treatment worked better on his college student subjects than it would with young children.

Nailbiting probably starts, he explained, as a means of reducing tension due to some underlying cause. In certain cases, even though years may elapse, the underlying causes remain active and the individual continues to bite his nails as a way of reducing the tension.

But in other cases, as time goes by, the underlying causes cease to be operative and the associated tension vanishes. Usually when this happens the person stops biting his nails and so nailbiting is reduced with age. Sometimes, however, the individual

may continue to bite his nails merely as the result of habit. Most college students who still bite their nails are probably in this last category.

Where nailbiting is a means for reducing tension, negative practice might be expected to fix the habit permanently or bring about a change to some other, perhaps more undesirable symptom, Dr. Smith indicated.

But where it is just a residual symptom, a reasonable degree of success from negative practice might be hoped for.

Science News Letter, July 20, 1957

CHEMISTRY

Colored Bricks Have Hues Baked In

► **NORMALLY** red-burning brick clays have been made to take on virtually all the colors of the rainbow.

The new development was reported by Dr. W. C. Bell, ceramic engineer and head of the industrial experimental program in the School of Engineering at North Carolina State College in Raleigh.

The colored bricks are permanent, acid- and stain-resistant and can be manufactured at surprisingly low cost with typical red clay.

It is done, Dr. Bell says, through the relatively new science of crystalline chemistry. He explains it this way:

"For many years ceramic scientists have dreamed of obtaining greater color variety from red brick clays, which have the dual advantage of being plentiful as well as providing excellent physical properties in the finished building product.

"Now, by delving into the relatively new science of crystalline chemistry, we can at last offer the architect the permanence and other virtues of burned clay products while at the same time permitting him to express design concepts without such strict color limitations."

The new method of coloring bricks varies from the well-known "glazing" system in several respects, according to Dr. Bell. It is, he says, far less expensive and it can be readily adapted to standard production in any modern brick and tile plant.

The color, he reports, is actually a part of the brick surface and may therefore be had in any of the infinite variety of textures associated with regular face brick.

According to Dr. Bell, the new brick developed through crystalline chemistry has a soft, natural and unglazed appearance.

A detailed report on the extensive research which led to the development of the process and the new type of brick was presented to the North Carolina Chapter of the American Institute of Architects.

Science News Letter, July 20, 1957

● RADIO

Saturday, July 27, 1957, 1:45-2:00 p.m. EDT. "Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. John R. Heller, director, National Cancer Institute, National Institutes of Health, Bethesda, Md., will discuss "The Problem of Cancer."

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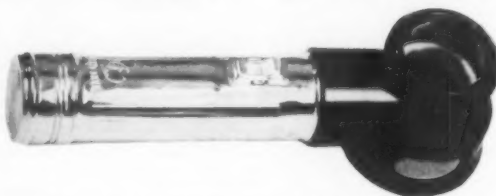
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Questions

AERONAUTICS—In what way would ceramic aircraft wings be superior to metal wings? p. 44.

BIOLOGY—What is the source for the enzyme scientists have found speeds the healing of burns? p. 39.

FORESTRY—How can ultrasonics be used to detect flaws in living trees? p. 40.

MEDICINE—What are the advantages to using live-virus vaccine in preventing polio? p. 40.

METEOROLOGY—What are the three main tools used by the weather forecaster? p. 37.

PHYSICAL CHEMISTRY—Where was element 102 produced? p. 35.

Photographs: Cover, British Information Services, Inc.; p. 35, Perkin-Elmer Corporation; pp. 37 and 39, Lockheed Missile Systems; p. 42, Fremont Davis; p. 43, University of Michigan; p. 48, Ideal Illuminator Co., Inc.

TECHNOLOGY

Wrist-Watch Size Dry-Storage Battery

► A MINIATURE dry-cell type rechargeable battery that is almost indestructible and is expected to be "good" for ten years' use has been invented by two Naval Ordnance Laboratory scientists.

Monroe B. Goldberg and Herbert B. Reed of the underwater ordnance department of NOL were seeking a midjet battery to use in the "brains" of underwater mines. Using lead, lead-oxide and silver powder for the plates in their experimental battery, they came up with a "mighty midjet," a single cell rated at 1.5 ampere hours and delivering nine-tenths of a volt. The familiar flashlight battery cell, many times larger, gives 1.5 volts and cannot be recharged successfully.

Adaptable to the transistorized circuits in hearing aids, walkie-talkies and portable radios, the tiny battery weighs 1.5 ounces, and is expected to be mass-produced at a cost of about 50% more than the mercury batteries currently being used. The advantages of long life, constant voltage and durability "far outweigh weight and cost considerations," NOL scientists reported.

The battery was developed after only 13 months of research.

Three years of experiments indicate the rugged device is highly resistant to shock, vibration, temperatures from minus 65 degrees to 165 degrees Fahrenheit, and "gassing," a common failing of sealed batteries in which the electric current decomposes certain chemicals to form gases that ruin the cell. The new battery contains no gas-forming chemicals.

The battery is so rugged that it withstands shocks better than the transistors in circuits containing both elements, tests showed.

The new dry-storage cell is under a Government patent, and has been released to the public for production and use.

Science News Letter, July 20, 1957

MEDICINE

Monday Morning Seen As Cause for "Colds"

► SUGGESTION is probably a more powerful cause of "runny" noses than any virus yet discovered, Dr. Robert J. Huebner, National Institute of Allergy and Infectious Diseases, Bethesda, Md., reports.

The common cold is widely blamed on virus infections but psychological tests have shown the more gullible a person is, the more apt he is to complain of upper respiratory illness, Dr. Huebner says.

The symptoms of the common cold have occurred in many volunteers whether or not they received virus-containing or virus-free materials.

Well-controlled studies of protective vaccines and antihistamines have revealed a surprising fact. Harmless control materials seemed to perform just as well as the supposedly active materials being tested. Also, at least half the cold sufferers reported a change for the better or a complete cure even if they had only received a sugar pill when they thought they were getting something else.

As a father of six school age children, Dr. Huebner reports he could not escape the feeling that there was a definite association of "colds" with Monday mornings. It is difficult to think of viruses behaving in such an illogical manner, he reports in the journal *Public Health Reports* (May).

Science News Letter, July 20, 1957

Do You Know?

An estimated 85% to 90% of the molybdenum consumed in recent years went into iron alloys.

For every dollar the American people spend on food products, eight cents represents commercial transportation.

Nematodes are small threadlike creatures which live on or in the small feeding roots of a wide range of host plants, including small fruits.

High priests of several South American Indian tribes chewed leaves from the coca plant, which contains the anesthetic, cocaine, and spat the juice on a patient's body where an operation had to be performed.

About 90% of the 90,000,000 persons who use swimming facilities each year swim very poorly or not at all.

Aerial color photography is now being used to make high-altitude pictures of mountainous and jungle regions in South America to give direct clues to mineral deposits.

Indoleacetic acid, a growth hormone, is produced by bacteria which normally live in the human intestine.

A "hot-shot" wind tunnel simulates not only high speed but also the temperatures of supersonic flight.

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For same purpose as item above. This assembly consists of the camera lens as well as the erecting unit. Lens is made by Eastman, 3-inch focal length (16mm telephoto) with speed of f-3.5. Erector assembly has 2 first surface mirrors and yellow filter. 9.95

EXTRACTOR HYDRAULIC REMOTE CONTROL MASTER & SLAVE

Consists of two units. Designed to operate controls on boats, machinery, engines, motors, etc. without need for rods, cables, pulleys, etc.

When connected with 1/4" tubing & filled with oil they act as a precision, remote controller. When Master handle is moved, Slave arm responds in exact motion. Range is 0 to 90 degrees. USED Combination Master & Slave for 27.50

• New Machines and Gadgets •

For sources of more information on new things described, send a self-addressed stamped envelope to SCIENCE SERVICE, 1719 N St., N.W., Washington 6, D. C., and ask for Gadget Bulletin 892. To receive this Gadget Bulletin without special request each week, remit \$1.50 for one year's subscription.

✿ **PORTABLE LABORATORY** for measuring bacterial pollution in water provides complete incubations in 18 to 20 hours and a uniform temperature within one degree Fahrenheit plus or minus. The water testing lab can be converted to run on auto batteries.

Science News Letter, July 20, 1957

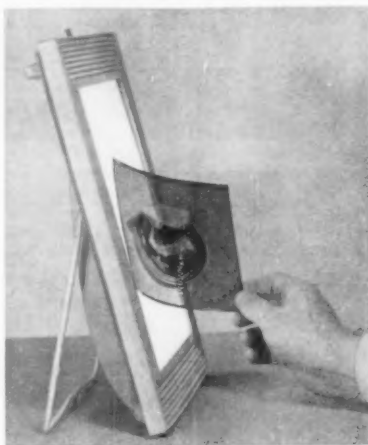
✿ **INFLATABLE BEACH BAG** is a combination carry-all and air pillow for use at the beach, pool or on picnics. Made of laminated layers of a plastic film, the bag is resistant to tearing and salt-water spray. A push-in plug valve holds the air in.

Science News Letter, July 20, 1957

✿ **SELF-STICKING TAPE** for blue prints and white prints is in red and will reproduce photographically. Made of polyester film, the tape is described as dimensionally stable, of high strength and non-brittle. It is available in nine patterns and six widths.

Science News Letter, July 20, 1957

✿ **TRANSPARENCY ILLUMINATOR**, billed as the world's thinnest, has a ten-by-ten-inch luminous surface, shown in the photograph, that is even and color-balanced. Heatless, the illuminator is two inches thick



and weighs less than three pounds. It can be carried in a brief case and/or hung on a wall.

Science News Letter, July 20, 1957

✿ **BATH SPONGE** solves the problem of what to do with bits and pieces of soap bars. Woven from plastic, the sponge is

made in the form of a pouch, with a drawstring at one end. Soap placed inside can be used until dissolved.

Science News Letter, July 20, 1957

✿ **MINIATURE FLOATS** are designed to reduce evaporation losses of volatile solutions. Made of a foamed polyethylene plastic, the floats contain thousands of tiny, closed air cells for buoyancy. Chemically inert, the floats neither contaminate a solution nor are affected by it.

Science News Letter, July 20, 1957

✿ **INDUSTRIAL GLOVES** are described as being thinner than surgeon's gloves. Corrosion-resistant, the gloves can be turned inside out and worn reversed for jobs requiring a non-slip grip. Available in small, medium and large, the industrial gloves are 10½ inches long.

Science News Letter, July 20, 1957

✿ **COMBINATION TESTER** is a flashlight and circuit checker. Resembling a conventional flashlight, the tool's tail end houses a compact circuit-testing unit and a plug-in receptacle. The flashlight operates on two standard batteries. A 30-inch plug-in test cord and needle clips are provided.

Science News Letter, July 20, 1957



Nature Ramblings



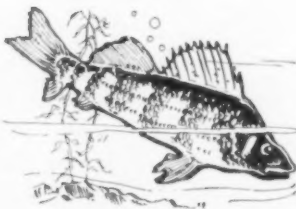
By HORACE LOFTIN

The Perches

► **THE PERCH** is a frisky, familiar fish—and a tasty one. This family of fishes has representatives both in the old and the new world, so that the first colonists found an old friend in the virgin American lakes and streams.

The true perch family (Percidae) is confined to bodies of fresh water in the Northern Hemisphere. The perches are generally elongate and typically have the two dorsal (back) fins clearly separated. On the other hand, the sunfishes (Centrarchidae) with which they are most often confused have their two dorsal fins fused together.

The champion of American perches is the yellow pikeperch (or walleye) of the Great Lakes region. This fish may grow to three feet in length and weigh some 25 pounds. At the other extreme in perch size is the least darter, which is sexually mature when about one inch long.



All of the true perches are meat-eaters. Even the youngest fry feed mostly on microscopic animals. As they grow larger, they change over to a diet of insects and other such fare. The mature forms of the larger perches are voracious eaters of minnows and other fish, accounting for their popularity with anglers.

One group of perches, called the darters, is generally quite small—"minnow sized."

But these diminutive fishes are among the most colorful of North American species. These darters are easy to catch in minnow seines and make a bright addition to any aquarium.

Sports and commercial fishermen have applied the perch's good name to a multitude of other kinds of fishes. It is hard to trace how or why some of these "perches" got their erroneous names. In other cases it is all too clear. Take the case of the "ocean perch."

For years, salt water fishermen from our northern ports caught, along with the cod and haddock, a great number of rose fish.

Now, the rose fish is tasty enough, but for some reason the public did not take to it. Then an enterprising soul had the idea of changing its name to "ocean perch." Since the rose fish went on the market with its new name it has become one of the most popular species from northern waters.

Science News Letter, July 20, 1957